REMARKS

Claims 9-11 are pending. Claims 1-8 have been canceled. No new matter has been added.

Objection to the Specification

The Examiner objects to the specification alleging, in part, that "the specification discloses SEQ ID NO:110 as an amino acid sequence (page 7, line 20) and as a nucleic acid sequence (page 7, line 14)."

Applicants respectfully disagree. Page 7, line 14 of the application refers to a nucleic acid sequence of SEQ ID NO:111, not SEQ ID NO:110. This is correct. SEQ ID NO:111 is a nucleic acid sequence and SEQ ID NO:110 is correctly identified at page 7, line 20 of the application as an amino acid sequence. No clarification is needed.

With regard to the remaining objections to the specification, Applicants have amended the application to change the title and to correct the minor error on page 7, line 3.

Objection to the Claims

Claim 1 has been canceled thereby obviating the objection to this claim.

Rejection of Claims 1-11 Under 35 U.S.C. §112, first paragraph

Claims 1-11 are rejected under 35 U.S.C. §112, first paragraph, based on enablement. In particular, the Examiner asserts that

> The specification, while being enabling for a humanized immunoglobulin or antigen binding fragment thereof having specificity for CCR2 comprising the heavy chain variable region sequence of SEQ ID NO:17 and the light chain variable sequence of SEQ ID NO:12 or a humanized immunoglobulin having specificity for CCR2 comprising the heavy chain variable region of SEQ ID NO:17 and the constant region of SEQ ID NO:110 (human IgG1 constant region) and the light chain variable region of SEQ ID NO:12 and the light chain constant region of SEQ ID NO:112 (human Ck), does not reasonably provide enablement for a humanized heavy chain or a humanized light chain ...or a humanized immunoglobulin or antigen binding fragment thereof having specificity for CCR2

> comprising the heavy chain variable region sequence of SEQ ID NO:17 and the light chain variable region sequence of SEQ ID NO:12 and a portion of the human constant region of SEQ ID NO:110 as broadly encompassed by the claims.

Prior to addressing this rejection, Applicants point out that claims 1-8 have been canceled, thereby obviating the Examiner's rejection with regard to the enablement of an immunoglobulin heavy chain or light chain.

With regards to the constant region, the Examiner asserts that "the specification does not provide working examples of humanized immunoglobulins comprising just any portion of the human IgG1 constant region wherein the humanized immunoglobulins bind CCR2." The Examiner further asserts that

> A portion of the human IgG1 constant region (i.e., a portion of SEQ ID NO:110) encompasses a myriad of fragments of the heavy constant region, which can be any one of the constant regions (CH1-3) and also may be a hinge region. However, the language also reads on small amino acid sequences, which are incomplete regions of the constant regions of the antibody. The specification does not provide sufficient guidance or direction as to the tolerance to modification and the extent of such tolerance; the specific portion of the constant regions which can be predictably modified and which portions are critical for maintaining antibody specificity for CCR2. One skilled in the art would neither expect nor predict the appropriate functioning of the antibody as broadly as is claimed.

Applicants respectfully traverse this rejection. Contrary to the Examiner's assertions, one of ordinary skill in the art at the time of filing would clearly expect and predict that even an antibody having no constant region, forget only a few amino acids of the constant region, would maintain its specificity for CCR2.

It was very well known in the art at the time of filing that the variable regions, and specifically CDRs within the variable regions, are responsible for the ability of an antibody to bind its antigen. In fact, at the time of filing, it was generally known in the art that antibody fragments having absolutely no constant region, namely single chain Fv antibody fragments, retain binding specificity of an antibody that includes a full constant region. Applicants note that the claims recite that the immunoglobulin or antigen binding fragment thereof has the heavy

chain variable region of SEQ ID NO:17 and the light chain variable region of SEQ ID NO:12. Thus, the claimed antibodies include all six CDRs, the regions of the antibody responsible for maintaining antigen binding specificity. Thus, a skilled artisan would clearly expect that the claimed immunoglobulins comprising even a few amino acids of the constant region would maintain its specificity for CCR2. The Examiner has provided no evidence to the contrary.

For the reasons above, Applicants have clearly provided sufficient guidance to enable the claimed immunoglobulins and antigen binding fragments thereof. Applicants respectfully request that the Examiner withdraw this rejection.

Rejection of Claims 9-11 Under 35 U.S.C. §103(a)

Claims 9-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over LaRosa et al. (U.S. Patent Number 6,727,349) or LaRosa et al. (U.S. Patent Number 6,696,550) in view of Bonnefoy et al. (WO 99/58679).

Applicants respectfully request that the Examiner remove these rejections because the present application was subject to an obligation to assign to Millennium Pharmaceuticals, Inc. and both U.S. Patent Numbers 6,727,349 and 6,696,550 were assigned to Millennium Pharmaceuticals, Inc. (reel/frame 011196/0894 and 012511/0380, respectively) at the time of filing.

Obviousness-Type Double Patenting

Claims 9-11 are rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1-7, 10-16, 27-29, 36, 38-39, 42-43, 46-47, 50-52, 57 and 59-60 of U.S. Patent No. 6,727,349.

A terminal disclaimer is being filed herewith to obviate the rejection.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 5/10/06

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